

Step 10 Determine C1, D1, E1 and M1 for each sign post, where:

C1, D1, and E1 = Distance from 0.271 ft. (3 ¼ inches) below the bottom of the sign to bottom of bracket (see CD-612-7 and CD-612-8).

C1, D1, and E1 = Step 4 – (0.224 ft. + 0.271 ft.)

NOTE: 0.224 ft. (2 11/16 inches) corresponds to the distance from top of footing to the bottom of the bracket (see Figure 13-E).

M1 = Distance from the top of sign to 0.271 ft. (3 ¼ inches) below the bottom of the sign (B1+0.271).

Step 11 Determine F1, G1, and H1 for each post, see *Standard Roadway Construction Details* CD-612-7. Values above reference line are positive, values below reference line are negative.

Step 12 The footings should extend a maximum of 4" above the ground. Determine the maximum projection of the footings as per the Footing/Stub Projection Detail in *Standard Roadway Construction Detail* CD-612-7. If the projection is greater than 4 inches, then the footing will have to be beveled. Determine footing bevel as per Footing Bevel Detail and Footing Bevel Table in *Standard Roadway Construction Details* CD-612-7 and CD-612-10 respectively. If possible, lower the elevation of the top of footing to reduce projection to 4 inches or less, then footing bevel is not required. Detail Breakaway Grading Detail, Footing/Stub Projection Detail and Footing Bevel Detail do not apply to signs behind a traffic barrier or beyond the clear zone, as per *Standard Roadway Construction Details* CD-612-7.

Step 13 Enter all the data onto the Breakaway Support Data Table and Footing Bevel Table in the *Standard Roadway Construction Details* CD-612-10.

Note: The Break-Safe Sign Post Selection program on the compact disk is for DOT engineers, consultants and sign contractors. Using input from the designer, this program will automatically select the appropriate sign post section and the corresponding Break-Safe breakaway sign support assembly. To receive a personal copy of the Break-Safe Sign Post Selection CD, go to <http://www.transpo.com/customer-service/contact-us>, fill in the form and request the Sign Post Selection CD. The designer will need to enter the design criteria for wind speed, yield stress of steel I-beam and structure design life into the program, see note in Step 6 above.

13.3.2 Non - Vegetative Surface under Overhead Signs and Large Ground Mounted Signs

In order to reduce soil erosion and highway maintenance costs associated with spraying or trimming vegetation underneath signs, non-vegetative surfaces should be applied around the foundation of overhead signs and underneath large ground mounted signs as follows:

- A. Sign types – Conditions warranting use of non-vegetative surfaces
 - 1. Overhead Signs
 - 2. Sign Bridge- All cases
 - 3. Sign Cantilever – All cases
 - 4. Large Ground Mounted Signs
 - 5. Breakaway Sign Supports – Mowable areas

6. Nonbreakaway Sign Support – Mowable areas

This surface treatment is not to be used at breakaway steel “U” post sign support locations. The non-vegetative surfaces shall be constructed as shown in Standard Roadway Construction Detail CD-608-1.

13.4 Raised Pavement Markers

Regardless of the lighting conditions, designers shall include Raised Pavement Markers (RPM) on all HMA surfaces, except for thin overlays less than 2” over bare concrete pavement, to supplement traffic stripes. Develop the placement of RPMs as per the Standard Roadway Construction Details.

13.5 Traffic Stripes and Traffic Markings

The following provides the Department Policy on Traffic Stripes, Traffic Markings and Raised Pavement Markers.

1. On interstate highways, all permanent lane lines, longitudinal edge lines and edge lines on (curbed and uncurbed) ramps shall be 6 inch wide epoxy resin traffic stripes. The traffic stripes shall be calculated in linear feet for each 6 inch width of actual stripe (gaps are not counted) under the item TRAFFIC STRIPES, 6”.
2. On non-interstate highways, all permanent longitudinal center, edge and lane lines, edge lines on ramps, curbed and uncurbed ramps on Freeways and left turn slots shall be 4 inch wide epoxy resin traffic stripes. Permanent lane lines separating exclusive right or left turning lanes from through lanes shall be 8” wide epoxy resin traffic stripes. The traffic stripes shall be calculated in linear feet for each 4 inch width of actual stripe (gaps are not counted) under the item TRAFFIC STRIPES, 4”.
3. All permanent gore lines, crosswalks, stop lines, words, arrows and other pavement symbols shall be thermoplastic. The gore lines, crosswalks and stop lines shall be calculated in linear feet for each specific width (4”, 8”, 12”, 16”, 20”, 24”, etc.) of marking line under the item TRAFFIC MARKINGS LINES, __”. The words, arrows and other pavement symbols shall be calculated in square feet under the item TRAFFIC MARKINGS SYMBOLS. The route symbols shall be calculated in square feet under the item TRAFFIC MARKINGS ROUTE SYMBOLS.

Refer to Section 14 - Traffic Control Plans and Details for the design criteria of Latex Traffic Stripes and Traffic Markings.